# 7PAM2000-0901-2023 - Applied Data Science 1 - Assignment 1: Visualisation

# BY

# AISHWARYA SUKUMARAN

# STUDENT ID: 22058088

# Email: as23adl@herts.ac.uk

GITHUB LINK:

[AishwaryaSukumaran/-AishwaryaSukumaran-ADS1\_Assignment1: ADS1\_Assignment1 (github.com)](https://github.com/AishwaryaSukumaran/-AishwaryaSukumaran-ADS1_Assignment1)

INTRODUCTION:

1. The visualisation 1 represents the line plot of Seasonal rainfall in UK from 2000 to 2022 / Max and Min seasonal rainfall in UK from 2000 to 2022.
2. The Visualisation 2 represents pie chart of Ethnicity Percentage of Asians in England and Wales Regions.
3. The Visualisation 3 represents Bar chart of Average rainfall per year 2000 – 2022.

**Visualisation 1:** **Seasonal rainfall in UK from 2000 to 2022 / Max and Min seasonal rainfall in UK from 2000 to 2022. (Line Plot)**

Data source: <https://www.metoffice.gov.uk/pub/data/weather/uk/climate/datasets/Rainfall/date/UK.txt>

A graph of a graph of a graph

Description automatically generated with medium confidence

UK has four seasons (winter, spring, summer and autumn) and each season last for around three months per year. The rainfall precipitation amount in measured during all the four seasons from 2000 to 2022.

Line plot 1:

The first line plot represents the maximum and minimum rainfall in UK per year which was measured during the seasons. The maximum and minimum rainfall precipitation per year over the four seasons is calculated and plotted separately.

Line plot 2:

The second line plot represents the seasonal rainfall in UK from 2000 to 2022. In the year 2000 & 2022, heavy rainfall is observed during autumn and light rainfall during summer. Also, we could see that during the year 2014, 2016 and 2023 there was an extreme rainfall during winter. Thus, the highest and lowest rainfall precipitation amount of the season in the year can be easily determined and can be compared between the seasons from the second line plot.

**Visualisation 2: Ethnicity Percentage of Asians in England and Wales Regions. (Pie chart)**

Data source: <https://www.data.gov.uk/dataset/ff9cec02-c9d0-49ad-a491-fb734932524b/regional-ethnic-diversity-in-england-and-wales>

A pie chart with different colored circles

Description automatically generated

The regional ethnic diversity in England and Wales is taken as a base data. From that, I have plotted the pie chart of the percentage of Asians living in England and Wales region. By using the pie chart, we can easily identify and compare in which region the population of Asians are more or less. As we could see in the pie chart, around 35.9% of Asians are living in London which is the highest. The second highest is West Midlands 14.3% of Asians and rest of the population of Asians in the other region can be observed in the pie chart without any help.

**Visualisation 3: Average rainfall per year (2000 – 2022). (Bar chart)**

Data source: <https://www.metoffice.gov.uk/pub/data/weather/uk/climate/datasets/Rainfall/date/UK.txt>

A graph of blue bars

Description automatically generated

The above bar chart represents the average precipitation of rainfall per year from 2000 – 2022. The amount of rainfall is measured each month throughout the years, and I have determined the average of each year and plotted a bar graph to determine the highest and lowest rainfall recorded over the years mentioned above. As we could see, the highest rainfall has been recorded in the year 2000 and second highest in the year 2020. In the year 2003, the average rainfall has been recorded the least. Also, there was a huge decrease in the rainfall in 2021 when compared to 2000. Thus the average rainfall over the years is represented in the bar chart.

REFERENCES:

1. <https://matplotlib.org/stable/gallery/lines_bars_and_markers/bar_colors.html#sphx-glr-gallery-lines-bars-and-markers-bar-colors-py>
2. https://www.w3schools.com/python/matplotlib\_subplot.asp